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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/632,081

08/02/2000

Brian Banister

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7590

09/07/2004

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/632,081

Applicant(s)

BANISTER, BRIAN

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 6/17/2004, is a final office action.

Response to Amendment

2. The objections to the figures are withdrawn in response to the arguments filed 6/17/2004. The drawings were received on 6/17/2004. These drawings are approved.
3. The rejections of the claims under 35 USC 112, first paragraph are withdrawn in view of the arguments filed 6/17/2004
4. Applicant's arguments filed 6/17/2004 have been fully considered but they are not persuasive. Applicant states Harrison does not disclose generating a new weighting vector, which is a function of the first and second weighting vector as stated in claim 1. However, as stated in the previous office action, Harrison discloses a weight computer that generates weights and transmits the signal. At a second time period, data will be received via an antenna 310 that necessitates a change to the weights depending on the previously transmitted signal and its corresponding weights. This newly weighted signal is then transmitted. At a third time period, data will be received via antenna 310. This signal will cause a change in the weights of a new signal to be transmitted. The feedback signal is dependent on the second signal, which is dependent on the first signal.

Applicant states Harrison does not disclose generating a third complex number, which is a function of the first and second complex numbers as stated in claim 39.

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However, as stated in the previous office action, Harrison discloses a weight computer that generates complex weights and transmits the signal. At a second time period, data will be received via an antenna 310 that necessitates a change to the weights depending on the previously transmitted signal and its corresponding weights. This newly weighted signal is then transmitted. At a third time period, data will be received via antenna 310. This signal will cause a change in the weights of a new signal to be transmitted. The feedback signal is dependent on the second signal, which is dependent on the first signal.

Applicant states Harrison does not disclose generating a new weighting vector, which is a function of the first and second weighting vector and can determine whether the first weight vector or the second weight vector results in a stronger signal as stated in claims 54 and 55. The discussion stated above applies to claims 54 and 55 as well. In addition Harrison discloses the power of the signals is measured and compensated for in column 9, lines 51 to column 10, line 7.

Applicant states Harrison does not disclose receiving a single bit of feedback from the receiving units. However as shown in figure 5, and discussed above, Harrison discloses receiving a feedback signal and adjusting the weights according to this feedback signal. The feedback signal comprises a plurality of bits of information.

For these reasons and the reasons stated in the previous office action, the rejections of the claims are maintained and stated below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-56 are rejected under 35 U.S.C. 102(e) as being anticipated by Harrison et al (US 6,434,366).

Regarding claims 1-4, 31, 32, 35-43 and 48-56, Harrison discloses a method of transmitting signals from a plurality of antenna at a transmitting unit to a receiving unit. The device for transmitting is shown in figure 5. A plurality of sinusoidal radio carriers are generated and signals are modulated and transmitted from each of the plurality of antenna. Weight computer 306 computes a weight to adjust the amplitude and phase of the signal as shown in figure 5 and described in column 8, lines 18-33. The weighted signals are transmitted. The transceiver of figure 5 receives a feedback signal via antenna 310 that provides information to adjust the weights of the transmitter (column 8, lines 18-33). These new weights will be applied to a new signal to be transmitted. The newly weighted signal will be transmitted. The transceiver will receive new feedback information and the weights will be updated again as needed until all data has been transmitted. Numerous updates will occur.

Regarding claims 5-15, 25 and 33, the weight values are generated and each are formed from the weight computer 306 of figure 5.

Regarding claims 16-19 and 44-46, the time periods for computing the weight values will be known and comprise a plurality of time slots.

Regarding claims 20 and 47, the pilot signals are shown in figure 5 and are known in both the receiver and transmitter.

Regarding claims 21-24, 26-30 and 34, the receiver generates feedback signals after the first and second groups of weights are used. From this data a new weight group will be calculated.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd
9/6/2004

**KEVIN BURD
PATENT EXAMINER**